

## IN THE CLAIMS

1. (currently amended) An isolated and purified polypeptide having  $\Delta^6$  desaturase activity, which comprises[[:]] one or more amino acid deletions, insertions or substitutions relative to a polypeptide comprising the amino acid sequence as shown in SEQ ID NO:2, but has at least 90% amino acid sequence identity therewith.
2. (canceled)
3. (original) A polypeptide according to claim 2, which has a cytochrome b<sub>5</sub> domain.
4. (currently amended) A polypeptide according to claim 1, which ~~has at least one~~ comprises a histidine box.
- 5-11. (canceled)
12. (previously presented) A polypeptide according to claim 1, which occurs naturally in *C. elegans*.
13. (canceled)
14. (previously presented) A polypeptide according to claim 1, which is covalently linked to a moiety capable of being isolated by affinity chromatography.
23. (canceled)
39. (previously presented) An isolated and purified  $\Delta^6$  desaturase polypeptide comprising the amino acid sequence as shown in SEQ ID NO:2 with no more than five conservative amino acid substitutions, wherein the polypeptide has desaturase activity.
40. (previously presented) The polypeptide of claim 39 which has one conservative amino acid substitution.
41. (previously presented) The polypeptide of claim 39 which comprises the amino acid

sequence as shown in SEQ ID NO:2.

42. (previously presented) The polypeptide of claim 41 which is covalently linked to a moiety capable of being isolated by affinity chromatography.

43. (previously presented) The polypeptide of claim 41 further comprising a signal sequence.

44. (previously presented) The polypeptide of claim 1 which has at least 95% amino acid sequence identity with the amino acid sequence of SEQ ID NO:2.

45. (previously presented) The polypeptide of claim 1 which has at least 99% amino acid sequence identity with the amino acid sequence of SEQ ID NO:2.

46. (currently amended) An isolated and purified polypeptide having  $\Delta^6$  desaturase activity and which comprises at least 100 amino acids ~~a part~~ of the amino acid sequence as shown in SEQ ID NO:2.